1: Freeman . E-5 (1949-1951)1955 OC6 Iban OC6

Part III

AGRICULTURE

Introduction

56. The subsistence economy of the Iban, and indeed, their whole way of life is based upon the cultivation of hill rice, and it is to this subject which we now turn. Iban absorption in the growing of *padi* is complete, for each year every *bilek* family produces its own crop of rice; and it is upon skill in farming that the prosperity, and the very existence of an Iban family depends. The method they employ is that of shifting cultivation, and it is with this much condemned, and little understood system of agriculture that we shall be chiefly concerned. In the main my data are drawn from a detailed study of agricultural practice in one Iban community: Rumah Nyala, of the Sungai Sut; but this information is supported by observations made in many other parts of the Baleh, the middle Rejang, the Katibas, and the Ulu Batang Ai.

57. To what extent, it may be asked, are conditions in the Baleh typical of the Iban as a whole? An accurate answer to this question would require a very extensive survey, for the Iban are now established in all five Divisions of Sarawak. Such a survey has not yet been carried out, and in its absence, only a tentative estimate can be made. The Baleh is essentially a pioneer area, but in this respect it is not exceptional. At the beginning of the nineteenth century there were probably no Iban living north of the southern watershed of the Rejang basin, whereas to-day approximately 60% of the Iban population is settled northward of this line. The majority of these 'immigrants' occupy what may be regarded as pioneer areas. For our present purposes, a pioneer area may be defined as any hill region in which some of the Iban settlers are still felling and farming primary jungle (*kampong amat*). If this criterion be accepted, pioneer areas may be said to exist in the Kanowit, Kapit, Oya, Mukah, and Bintulu districts, and even in certain of the remote hill districts of the Second Division. In all of these regions, Iban farmers are following traditional methods of shifting cultivation, which are fundamentally the same as those current in the Baleh; and I estimate that the system described in this report is generally typical of the agricultural practice of at least from fifty to sixty per cent of the Iban population of Sarawak.

58. The Baleh, which falls within the 'undeveloped interior zone' of Sarawak, is an extremely hilly, and in places, a mountainous region. Ridges a few hundred feet in height, rise range upon range, to mountain massifs of three thousand feet and more. At the head of the Mujong, stand the Hose Mountains—a grotesquely shaped chain of limestone peaks, the one-time refuge of Iban rebels. Bukit Batu, of some 5,500 feet, is the highest of them. The rainfall is heavy (150 inches, and over, per annum), and the whole area is reticulated by an intricate system of fast flowing rivers and tributary streams. Almost everywhere the hills rise abruptly from the valleys, and river flats are rare. With a few negligible exceptions, there

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

133 is no swamp land suitable for the growing of wet *padi*, and in what follows therefore, we shall be dealing exclusively with the cultivation of dry, or hill *padi*. (Plate 1).

243 771 59. From the outset it must be stressed that in studying Iban cultivation of hill *padi*, we are concerned with a larger problem than the description and analysis of agricultural techniques in a subsistence economy. To the Iban, the growing of *padi* is a ritual undertaking, and their whole system of agriculture is based on an elaborate fertility cult. It is in drawing attention to the significance of this cult that the anthropologist has a special contribution to make. The vast majority of the Iban people are still 'pagan,' but they are, nonetheless, an extremely religious people, and ritual pervades every aspect of their lives. The gulf which separates them from the empirical and scientific world of the West is vast; and in terms of human development it is to be measured in at least several thousands of years. If the Iban are to be understood this fundamental fact must be faced, and any policy which does not take it into account is predestined to end in frustration and failure.

243 774 60. It is the fervent conviction of the Iban that their *padi* is a spirit, that it possess a soul, a personality of its own, and it is this belief that permeates the whole of their agricultural practice. In "The Golden Bough", Sir James Frazer describes Dayak belief in these well-known words: ". . . . the whole of the ritual . . . . is founded on the simple conception of the rice as animated by a soul like that which these people attribute to mankind. They explain the phenomena of reproduction, growth, decay and death in the rice on the same principles on which they explain the corresponding phenomena in human beings. They imagine that in the fibres of the plant, as in the body of a man, there is a certain vital element, which is so far independent of the plant that it may for a time be completely separated from it without fatal effects, though if its absence be prolonged beyond certain limits the plant will wither and die. This vital yet separable element is what, for the want of a better word, we must call the soul of a plant, just as a similar vital and separable element is commonly supposed to constitute the soul of man; and on this theory or myth of the plant-soul is built the whole worship of cereals, just as on the theory or myth of the human soul is built the whole worship of the dead—a towering superstructure reared on a slender and precarious foundation."[1]

243 774 778 788 61. Every Iban *bilek* family possesses a strain of sacred rice called *padi pun*. Although all kinds of *padi* are animated by spirits, most important of all are the spirits which dwell in the *padi pun*, for these are 'the lords of all' (*raja antu padi magang*). Year by year each *bilek* family plants, in the middle of its farm, a small plot of *padi pun*, and this spot becomes a centre for the performance of manifold rites. It is through their *padi pun* that the Iban communicate with the rest of the *padi* spirits. A good example of this is the ritual known as *gawai memali umai*, which is performed when young *padi* is attacked by disease. A member of each *bilek* family (it is usual for the whole of a long-house community to join in the rites) goes to the farm, and with due ceremony digs up a single clump of *padi pun*. Back in the long-house, the clump of each participating *bilek* family is placed in a temporary shrine (*ranyai*), and for one whole night various gods [776] (chief of them is Pulang Gana, the god of fertility), and celestial spirit-mediums are invoked, so that, using their miraculous powers, they may medicine the

[1] Sir James Frazer, "The Golden Bough," Abridged Edition, 1932, p. 473.

[See p. 146a, Cat. 116.-Analyst] 28

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

stored there, and to see that everything is in order;[1] and after reaping is completed a general return (extending over several weeks), is customary so that all *bilek* families may join in the performance of harvest and other rites. During crucial stages of the agricultural cycle however (i.e. felling, sowing, weeding and reaping), the main long-house is almost invariably deserted, members of all *bilek* families living exclusively in their *dampa*. On 1st March, 1949, for example, when I arrived unannounced at the long-house of Temenggong Koh, in the Ulu Baleh, I found all of its forty apartments untenanted; logs of wood were propped against closed doors, *padi* mortars (*lesong*) were upturned and the planks of the *ruai*, bare of mats, and thick with dust—the whole house had the forlorn and derelict air of an unfrequented building. As I discovered, when I travelled on upriver, everyone was preoccupied with the harvest, and the various *bilek* families of the community were living in their *dampa*, distant, in some cases, about seven miles from the main long-house. The encountering of deserted long-houses is a common experience in the Baleh region—but only if one travels unannounced. Normally, the movements of Government officers are made known well in advance, and in good time there is a general return to the main long-house—for it is believed that Government is opposed to the *dampa* system.[2] In this way, the fiction of the permanently occupied long-house is successfully perpetuated; but within an hour or so of the officer's departure, the people are making their way back to their scattered *dampa*.

74. Such surveys as I was able to carry out suggest that the *dampa* system is widely prevalent throughout the Baleh region (and, indeed, in all other similar pioneer areas), all but the smallest of long-houses finding it an imperative expedient. If subsistence is to be maintained and adequate crops be achieved it is essential that those managing a farm should live as close to it as possible. Granted the method of shifting cultivation, recourse to the *dampa* system is inevitable as soon as a community increases beyond about eight *bilek* families, and farms become removed by more than a mile or two from the original centre of cultivation. The various *dampa* into which the *bilek* families of a community are grouped, at any given time, may be thought of then, as satellite houses, in relation to the main long-house—temporary habitations brought into being by the exigencies of shifting cultivation.

The Dampa System at Rumah Nyala

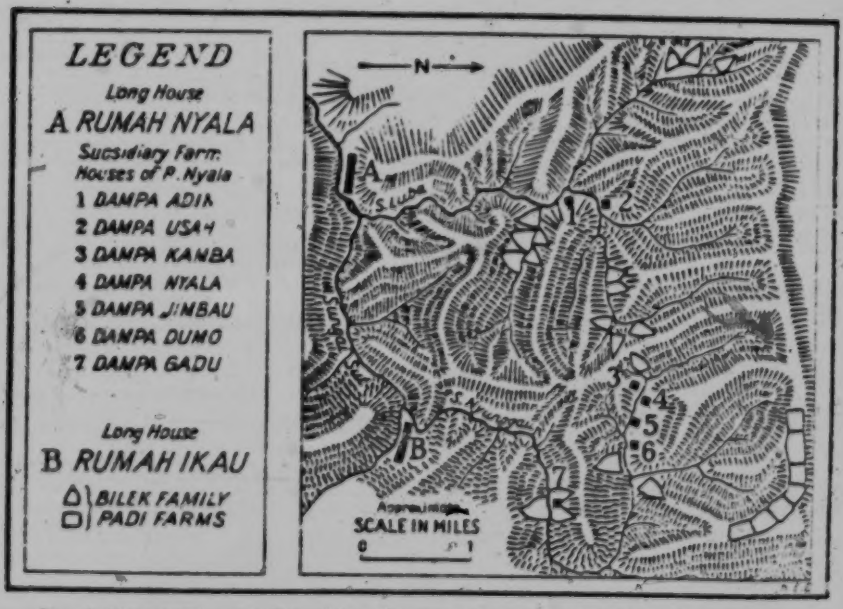
75. To illustrate the working of the *dampa* system in further detail, let us now consider the conditions existing at Rumah Nyala, during the two farming seasons 1949-50 and 1950-51. Rumah Nyala, it will be remembered, is a community of 25 *bilek* families, and the main long-house is situated on the true right bank of the Sungai Sut, some four or five miles from the Sut-Baleh confluence.

[1]Some communities in the Baleh possess rubber plantations, and these plantations (held in private ownership by individual *bilek* families) are generally close to the main long-house. Where rubber plantations do exist, it is usual to find that one or more of the men of each *bilek* family spends as much time as possible living in the main long-house and tapping rubber, while the other members of the family remain in the *dampa* and attend to the growing of *padi*.

[2]Government regulations prescribe that no house shall have fewer than 10 apartments, and strictly the *dampa* system is a contravention of this requirement. Sea Dayak Fines, Third Division, 1940; Part V, Section 10e, states: "A Dayak, who does not within a reasonable time move all his *padi* from his farming hut to his house after harvest, shall be considered to have moved within the meaning of this section." Part V, Section 10f, requires that "The person who erects ('*dulu ngentak*') the first post of a new house of less than 10 doors without special permission shall be fined $25 all to Government, and the house shall be dismantled by the builders."

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

361 The Sut, which drains several hundred square miles of hilly country is navigable
● 133 for over 40 miles by native canoe, and normally there was sufficient depth of water for me to be able to reach Rumah Nyala in a 36ft. *prau*, powered by a 22 h.p. out-board engine. The Sungai Sut was first occupied by the Iban in the 1890's, and for the most part the hills bordering its course are covered with secondary jungle; virgin forest being found only in the headwaters of its tributary streams. When I arrived at Rumah Nyala in 1949, I found that all 25 *bilek* families were following the *dampa* system, the whole community being concentrated in two minor tributaries of the Sut: the Sungai Luba and the Sungai Nyunggau. Neither of these streams was navigable by canoe; instead there were rough foot tracks along their courses and ridges. As will be seen from the accompanying sketch map, the two streams had a common watershed. The Sungai Luba fell within the territory proper of Rumah Nyala, while the Sungai Nyunggau (as already recounted in Para. 53), though coming under the jurisdiction of a neighbouring community, Rumah Ikau, had been made freely available to certain *bilek* families of Rumah Nyala, on a temporary basis. The people of Rumah Nyala had been farming in these two streams since 1944, and from the outset they had constructed and lived in locally situated *dampa*.



Sketch Map 3. The subsidiary farm houses (*dampa*) and *bilek* family *padi* farms (*umai*) of Rumah Nyala, Sungai Sut, 1949-50
(See *Sketch Map* 1 for approximate location)

361 76. In the sketch map (Sketch Map 3) the locations of the various *dampa* of
103 Rumah Nyala for the season 1949-50 are shown. It will be seen that there were two houses in the Sungai Luba, and five in the Sungai Nyunggau. For convenience, each of these seven *dampa* has been named after one of its senior and founding members: but it must be stressed that this system of naming is very

3: Low G-5 (1844-1847) 1848
OC6 Iban OC6

Dyaks of Peduñgan. The village established here is well built, and contains about sixty families; it is not fortified in any way, though the Dyaks possess some small brass guns. The other divisions of the tribe, which are equally under the protection of the government of Sarawak, have villages on the Samarhand and Sadong rivers, but many little clusters of houses are to be found scattered about in the country near the mouths of the above-named streams, nominally belonging to the tribe, though not residing at any of the principal villages. The Dyaks of Lundu have been a pet tribe of Mr. Brooke's, on account of the heroic gallantry displayed by them and their chief on many occasions of difficulty and danger. The conduct of the orang kaya, and his assistance to Mr. Brooke in the Seniawan war, are fully detailed in the Hon. Captain Keppel's work, whom they also accompanied in his expeditions against Sakarran and Sarebas, which are their favourite places of attack, they being always anxious to revenge themselves on these people, who have caused them so much loss and trouble during their residence in their former villages.

The country occupied by the sea Dyaks on the great rivers is generally flat towards the sea, but more undulating in the interior. It is covered in many parts with dense forests, and the soil is rich and productive, so that, when peaceably disposed, they are large exporters of rice, and all kinds of fruits are abundant and very cheap in their districts. As far as is yet

7:Gomes M-5 (ca. 1890)1911 OC6 Iban OC6

palm-leaves (*kadjang*). This is tied on to a rough framework of wood fixed on the boat, and is an excellent protection against the weather.

There are many dangers to be guarded against when travelling by boat in Borneo. Many rivers have a large tidal bore during the spring-tides, and if the boat be in some narrow part of the river when it meets the tidal bore it is likely to be swamped. The safest course is to wait for the tidal bore in some broad part of the river, where it is not at all dangerous.

There are also many sand-banks, and though Dyak boats draw little water, still these have to be guarded against when the tide is very swift. I have known cases where a boat has struck against a sand-bank and been rolled over and over by the swift tide, and lives lost.

In certain parts of the lower reaches of the large Bornean rivers, where large sand-banks are to be found, the swift incoming spring-tide makes, soon after it has covered the sand-bank, a peculiar dangerous motion of the water, called by the natives *langan*. We all know the bubbling appearance of boiling water in an open pot, and if we picture to ourselves that kind of thing on a very large scale, it will give a good idea of what the *langan* is like. It does not last long in any particular part of the river, because, as soon as the water has risen and is deeper, the *langan* disappears. It is most dangerous. The peculiar motion of the water is so irregular and uncertain that small boats are easily swamped, and many lives have been lost owing to this *langan*. The part of the Batang Lupar near the village of Rawan is particularly dangerous from this cause. I have known of many cases of a Dyak boat being swamped by the *langan* there, and not a single person being saved. Though the Dyaks are good swim-

7:Gomes M-5 (ca. 1890)1911 OC6 Iban OC6

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BOAT-TRAVELLING

A boat being dragged through the rapids. The boatmen are wading in the water and dragging it along.

[Facing p. 146]

7:Gomes M-5 (ca. 1890)1911 OC6 Iban OC6

mers, the boat is rolled over by the swift current, and they have no chance of saving themselves. When I have had to travel past Rawan during the spring-tides when there is most danger, if the tide has only just made, I have thought it wisest not to run any risks, and have told my boatmen to fasten the boat to the bank, and wait for ten minutes, and not to proceed till there was no danger of being swamped by the terrible *langan*.

In the rapids up the rivers travelling is done in a "dug-out," because that draws little water. The boat has a long cane or creeper tied to the bows, and when it has to be pulled over the rapids some of the men drag at this, while the others remain in the boat and work with their poles or small paddles. The skill with which the Dyaks pole the boat along, as they stand up in it, is beautiful to see. With a skilful turn of the pole they will guide the boat past some huge boulder which it seems impossible to avoid. The sensation to one sitting in a boat going over the rapids, either up or down stream, is not particularly pleasant. The boat is bumped and jerked about, and the water often splashes in. At times the boat will be propelled by poles; then, when the water is too shallow, the men jump out and walk by the side, pulling the boat along. When they get to deeper water, they jump in again.

The Dyaks are most excellent companions when travelling has to be done. They are hard-working and good-tempered, and most resourceful. When one is travelling in small "dug-outs" in the upper reaches of the river, it often happens that he has to spend some nights on the journey. If any Dyak house be near, the travellers make for it, knowing well that the hospitable inmates will gladly give them shelter. But sometimes

11:Freeman E-5 (1949-1951)1957 OC6 Iban OC6

chanced to visit a number of the more distant Iban communities of the Third Division where earthenware pots were still being made and used. The main purpose of this present paper is to give an account of the technique of pottery making as my wife and I observed it in an Iban long-house in the head-waters of the Mujong River of the Kapit District.[4]

Early in November, 1949, so that we might witness a set of major rituals (the chief of which were several *gawai kenyalang*, or hornbill rituals) we had travelled to Rumah Tungku (a long-house of 50 apartments) in the lower reaches of the Sungai Tiau, a stream that rises among the grotesque granite peaks of the Hose Mountains and flows away to the south-west to become one of the main tributaries of the Mujong. Soon after our arrival, while making a census of the families of Rumah Tungku, we noticed that many of the apartments contained stocks of earthenware pots. Blackened by soot, they stood in racks above the elevated cooking hearth (*dapur*) of the apartment, or hung in rotan casings from the hearth's side-posts. When we asked about them we were told that all the pots we had seen had been made by women of Rumah Tungku from local clays and by traditional Iban methods. In several parts of the Baleh region we had come across other long-houses where pots of Iban make were being used, but nowhere had we seen as many *priok tanah* as at Rumah Tungku.

Clearly pottery making was a flourishing local industry, and we resolved to find out what we could about it as soon as the *gawai* we had come to observe and study were at an end.

By Friday, 25th November, even the most elaborate of the *gawai* had been over for several days. Life in the long-house was gradually returning to normal and routine domestic tasks that had been pushed to one side because of preoccupation with ritual matters of high importance were slowly being taken up again. So it was that on the morning of that Friday we came across old Runin, seated on a mat at the edge of her section of the great gallery (*ruai*) of the long-house, making a clay pot. Here was the opportunity we had been hoping for: we sat down beside her and watched.

During the previous weeks we had seen a good deal of Runin. She was a charming old lady, full of good humour, and possessing an expert knowledge of the part Iban women play in *gawai*

17:Bedford D-5 (1958) 1959 OC6 Iban OC6

Sea Dayak Diet: A Longhouse Survey

by

P. W. BEDFORD, B.SC., M.B., CH.B.

During the last two and a half years I have carried out several tours of Sea Dayak areas in the Second Division visiting three or four houses each day. It was soon realised that such tours furnished only very superficial information regarding the general level of health and nutrition of these people and the prevalence of disease from which they suffer. The present study was undertaken to enquire into these questions more closely.

Rumah Bujak at Nanga Pruan was chosen for the study. The reasons for this were its proximity to Simanggang and the fact that this house is fortunate in having a very active, enterprising headman so that willing co-operation from the people of the longhouse was to be expected throughout the period of study.

From the 2nd February to the 29th November, 1958, the longhouse was visited every Saturday or Sunday by a team usually comprising the Divisional Medical Officer, a hospital assistant, laboratory technician, one or more hospital attendants and one or more trained *ulu* dressers. Sick people were examined each week, either treated on the spot or sent to Simanggang for outpatient or inpatient treatment as indicated. In addition the investigations to be described below were carried out during these weekly visits.

Rumah Bujak, Pruan

Before presenting the results of the study a brief description will be given of the longhouse and the way of life of the people who live in it.

The people of Rumah Bujak come originally from Sungai Pinggai on the Undup River. The Undup is a moderately large left branch of the Batang Lupar, the mouth of which is about twenty minutes' journey by outboard upriver from Simanggang. Sungai Pinggai is a further three hours' journey up the Undup by outboard.

17:Bedford D-5 (1958) 1959 OC6 Iban OC6
Rumah Bujak

175 During the occupation the Japanese cut a channel through
[133] the narrow waist of a *tanjong* downriver from Simanggang. As a consequence water was diverted from a large loop of the river which dried out leaving an area of very fertile padi land. The people of Rumah Bujak settled on this land in 1943.

[423] After the occupation disputes arose regarding right of tenure of land on which the people of Rumah Bujak had settled. Several legal actions arose, as a result of which the people of Rumah Bujak were allowed to remain where they were. They also retain the rubber gardens at the site of their old house at Sungai Pinggai.

342 The present house was built in 1946. Several *langkaus* (temporary dwellings) were built alongside the house in 1955.

The original house built at Pruan contained 19 doors. Since its completion 11 *langkaus* have been built at the ends of the original longhouse.

162 The population of the longhouse was 169 at the start of the
621 investigation. During the period of investigation there were five births and one death. The death was that of a monster shortly
165 after birth, following a pregnancy complicated by hydramnios.

361 The house is built on low-lying tidal swamp. On two or three days each month the ground under and about the house is
356 flooded at high tide. The rooms are small, dark and hot. Some are kept moderately clean but some are very dirty. The majority
342 of rooms have separate kitchens.

231 Animals and poultry are reared under the house. The ground underneath and around the house is liberally strewn with
364 rubbish of all descriptions. There is no formal system of sewage
514 disposal. The occupants of the house defaecate and micturate through holes in the verandah and at the rear of the rooms in the time honoured fashion. Faeces are devoured by pigs and
[231] poultry.

Agriculture

241 The people of Rumah Bujak own extremely fertile swamp
433 padi land. They grow sufficient rice for their own needs and

18·Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6 Sibu

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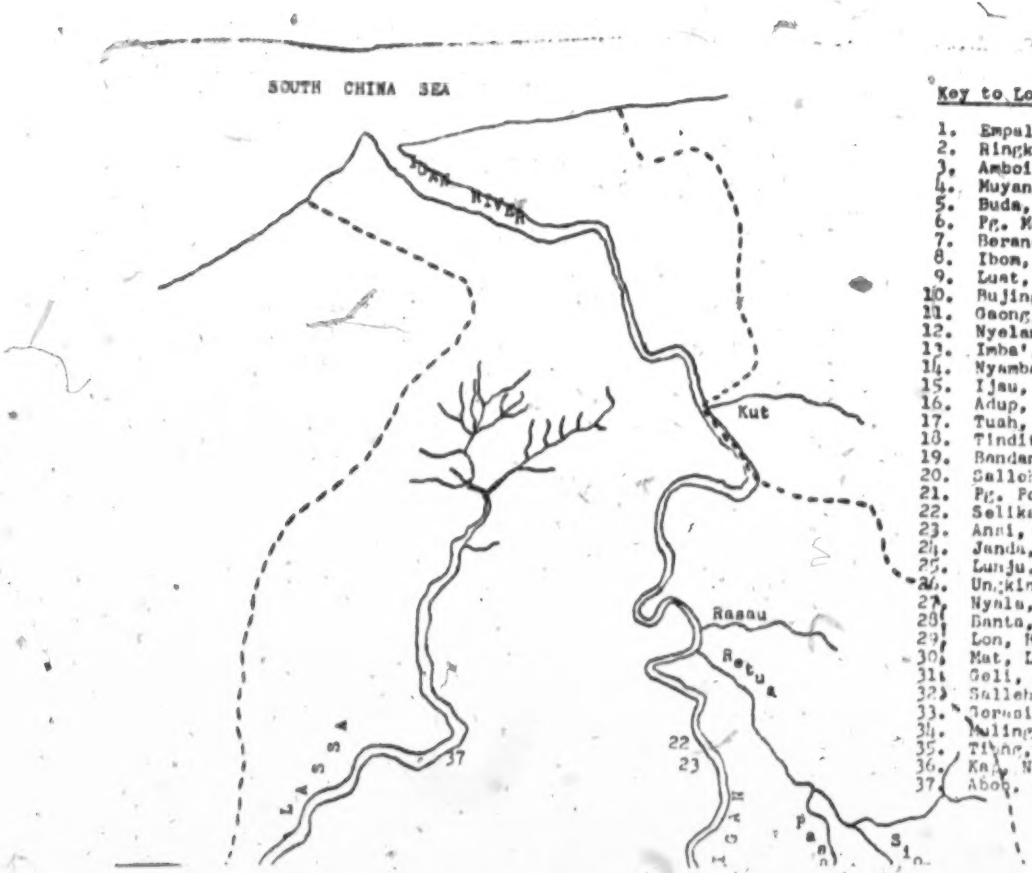

Key to Longhouse Numbers 10

1. Empaling, Assan
2. Ringkai, Lubok Guchi
3. Amboi, Assan Nunggang
4. Muyang, Batu Wong
5. Buda, Naman
6. Pg. Meringgai, Durin
7. Berandah, Durin
8. Ibom, Durin
9. Luat, Durin
10. Bujing, Durin
11. Gaong, Sengan
12. Nyelang, Salim
13. Imba', Salim
14. Nyambang, Salim
15. Ijau, Oya Road
16. Adup, Oya Road
17. Tuah, Oya Road
18. Tindit, Oya Road
19. Bandang, Pasai Bon
20. Salleh, Pasai Bon
21. Pg. Poh, Pasai
22. Selikau, Tutus
23. Ansi, Tutus
24. Janda, Batu Burak
25. Lunju, Penasu'
26. Ungking, Penasu'
27. Nyala, Aup
28. Banta, Aup
29. Lon, Bidut
30. Mat, Langgup
31. Geli, Bawang Assan
32. Salleh, Bawang Assan
33. Gerasi, Lebaian
34. Muling, Langan
35. Tiong, Melangan
36. Kap, Nanga Lassa
37. Abob, Lassa

18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6
Sibu

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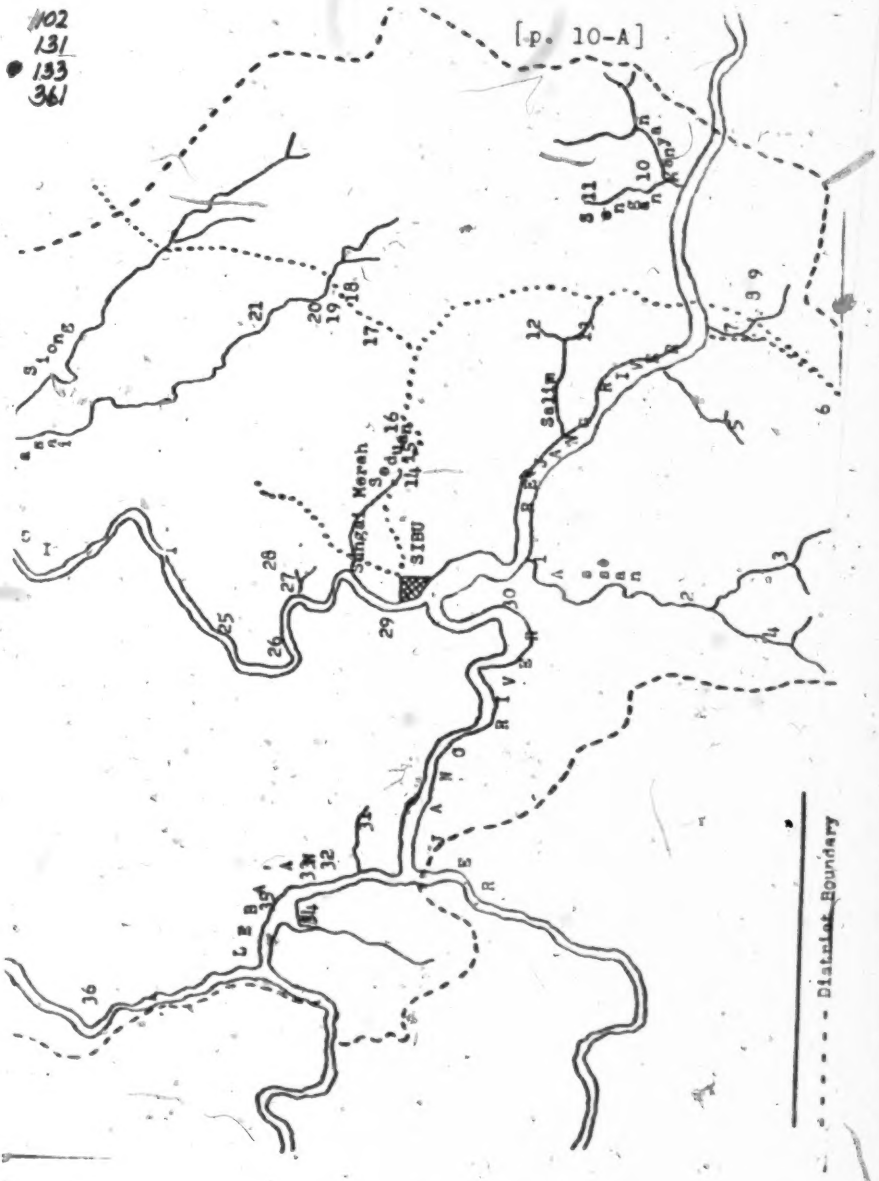
[p. 10-A]


Sungei Merah
SIBU
Sungei Sallir
R. Igan
R. Rajang
Batang Igan
Batang Lassa
Batang Oya
Batang Mukah
Batang Balingian
Batang Kanowit
Batang Lupar
Batang Saribas
Batang Kalaka
Batang Kanyau
Batang Kanowit
Batang Rajang
Batang Igan

18 Sutlive E,M:5 (1957-1971) 1973 OC6 Iban OC6
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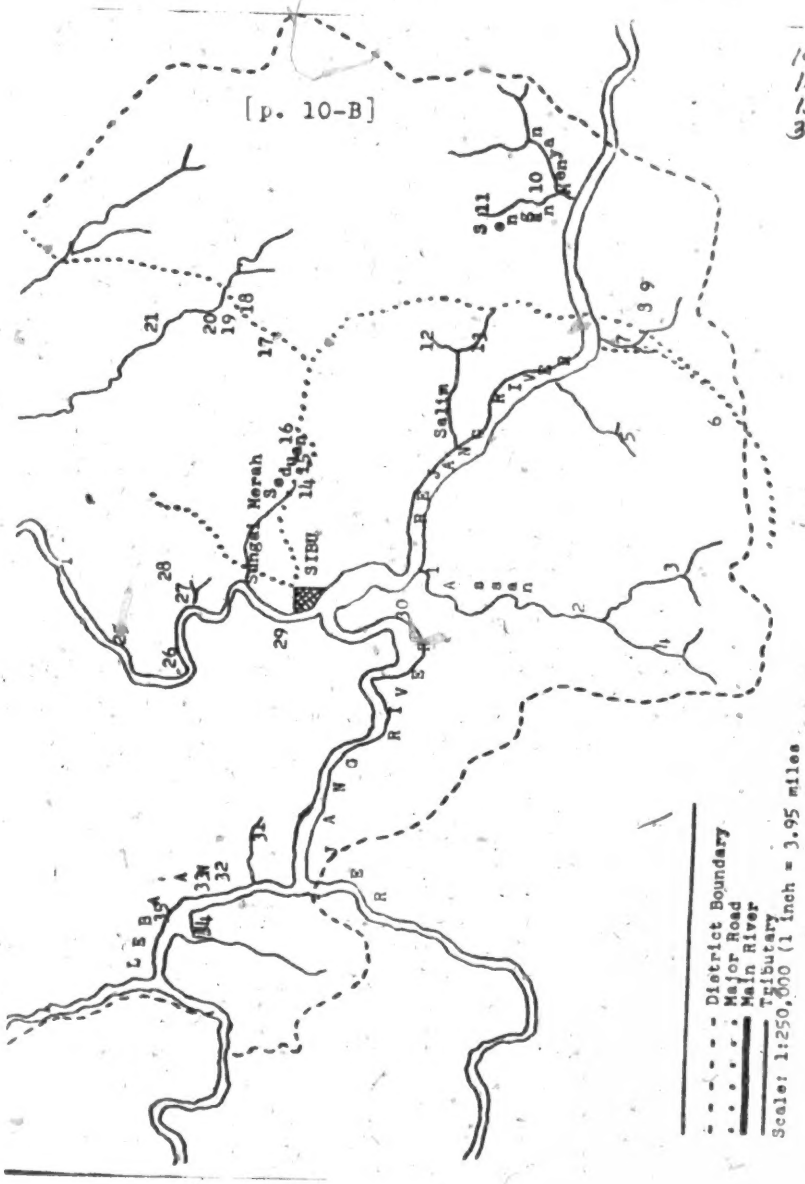
[p. 10-B]



18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6 Sibu

13 ecological adaptation of the Ibans, Chinese and other groups has been made in terms of that environment. A century ago, the Sibu District was covered with virgin jungle cut by a labyrinth of streams and large navigable rivers. Unlike the fertile areas of Java which benefit from what Geertz (1963-38), citing Mohr, has called a

> "happy combination of . . . the four elements of the ancient world: fire, water, earth, and air,"

the environment of the Sibu District offers no such happy combination. Nevertheless, certain resources have been found and from the exploitation of these the ways of life in rural and urban areas have been developed.

1. Soils

> "The greater part of Sarawak is geologically very young, and well over four-fifths of the State comprises Tertiary and Quarternary sediments" (Jackson 1968-16).

The Sibu District is composed of deposits laid down during the Quarternary Period, principally of podsolics and peat soils. On the "Soil Map of Sarawak, Malaysia Timor, 1968," published by the Agriculture Department, the District is almost uniformly described as consisting of "mainly deep peat soils" (Histosols). In areas near the mouths of the principal rivers of the Third Division, there is little other soil than peat. Farther upriver and in the Sibu District, the peat swamps are broken up by hills of podsolics, shales and other soils.

18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6 Sibu

134 I. M. Scott, a soil surveyor working with the Agriculture Department, has published a number of reports based on his analyses of the soil types in the District, including areas along the Oya and Durin Roads, and the Lassa-Igan areas. In his report on a soil survey of 33.3 acres at the 22nd Mile, Oya Road, Scott writes that

> "none of the soils is chemically rich" (1964-12).

[133] The entire area isunderlain by a complex of shale, sandstone and quartz veins.

> "The most widespread profile form developed in the upland soils . . is a yellowish brown clay or clay loam grading downwards to a somewhat heavier-textured and generally more reddish-coloured zone, the latter overlying or incorporating gravelly material."

"Sandy clay loams," "sandstone bands," "peats and mucks," and "poorly drained alluvial soils," characterize the survey area and, to a high degree, are representative of the District.

With rare exceptions, the soils of the District are generally poor for the purposes of cultivating rice, the primary food of the people of Sarawak. The hilly areas are subject to leaching, a phenomenon common in tropical countries where nutrients do not accumulate in the soil because the rain causes them to percolate down. Cultivation which severely disturbs the soils or is done too frequently without adequate periods of fallow hastens the processes of leaching that depletes

18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6 Sibu

134 found and where alluvium is deposited by overflowing rivers. Examples of the former are found in the area of the 6th mile, Durin Road, where farms produce outstanding yields of rice though cultivated year after year. The latter conditions occur on the banks and promontories of the Batang Igan, especially between Sungai Merah and Tanjong Penasu, where annual deposits of alluvial soils replenish the nutrients at the expense of upriver lands whence the soils have eroded. Farmers in those areas on the Igan profitably cultivate the same plots annually.

Generally, however, the soils in the Sibu District are relatively poor for frequent cultivation, a fact which becomes more important in light of population increases and shorter periods of fallowing, and the farmer who is able to grow enough rice to last him from one harvest to the next is one of a minority.[2]

2. Water

132 133 The data from the meteorological station in Sibu provide information which may be taken as representative for the District, and reveal a highly erratic picture of rainfall and flooding. With only a few interruptions, records exist for the past 33 years and a summary of

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[657] [2] The Welfare Department supplied an average of three kati (1-1/3 pounds) to occupants of 75 longhouses in the Sibu District in 1971. In longhouses surveyed, 36% produced enough rice for the full year.

18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6 Sibu

those data for 1915 - 1957 (Scott 1964-4) appears in Figure 1. During that period, the average total rainfall was 126.13 inches per annum.

It is impossible to easily characterize the distribution of rainfall throughout the year, apart from Mohr's classification (1944) of the District as being within a "continuously wet belt," as is the whole state. On the average, the wettest month is January with over 13 inches of rain, and the driest month is June with 7½ inches. Over 10 inches of rain fall on average in every month between September and April. Monthly averages oversimplify the picture, however, as Figure 1 indicates. For the wet season occasionally fails to develop and less than 5 inches have been recorded in both January and February. In other years it develops late and extreme values of about 30 inches have been recorded in both March and April.

The Sibu District is part of the great Rejang Delta with its labyrinth of streams and channels cutting through the swamps. On account of the flatness of the land and the tremendous volume of water, the water-table in much of the District is only inches below the surface of the land. Although Sibu is about 80 miles from the sea, like the rest of the District it is but a few feet above sea-level, and is affected twice daily by tides. Underground rivers course through some low-lying regions and have played havoc with road-building projects.

18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC6
Sibu

The combination of the erratic picture of rainfall, a great amount of water, flat land and high tides, makes prediction of water levels hazardous in the extreme, and when heavy rains coincide with high tides, flooding is likely to occur. This element of uncertainty is of great importance to both hill - and wet-rice farmers.

For the past three years, i.e., the agricultural years of July to March, 1969 to 1971, forty per cent of the Ibans surveyed in the Sibu District claimed to have been caught out by early rains or to have lost their crops to flooding. Some anticipated a short but sufficient dry season in late June or July and cleared accordingly, only to have rains come after their land was cleared and the brief dry season earlier. In 1971, there were two short dry spells and some who were not ready to burn in the first one at the end of May were able to take advantage of the latter one in August.[3] Farmers in low-lying areas

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[3]Formerly, Iban horticultural activities in all areas were carried out according to the positions of three principal constellations: the Pleiades (bintang banyak), Orion (bintang tiga), and Sirius (bintang Tangkong peredah). These stars are still followed in the schedules of some Ibans, especially in remoter areas, where it is said, "If there were no stars we Iban would be lost, not knowing when to plant; we live by the stars" (Freeman 1955-40). Stellar lore is rapidly disappearing in this District and temporal orientation is increasingly based on the calendar; for example, the ritual beginning of horticulture is fixed on June 1st when the Gawai Dayak is observed. This, also, has obvious problems, because of unseasonable rains.

18:Sutlive E,M-5 (1957-1971) 1973 OC6 Iban OC
Sibu

132 where wet-rice is cultivated are not so affected by unseasonable rains,
133 for with the introduction and use of herbicides, they can easily clear
243 and burn their farms in the dry weather available. But these farmers are more vulnerable and have suffered losses due to flooding at different times of the horticultural year. In 1970, some farms were flooded in the Pasai Bon area when the rice was coming to fruit, others when the rice was ripe and the panicles so heavy that they fell over into the water and rotted. At the time of this writing, the District's lowlands have been inundated with from one to three feet of fetid water in an unseasonable August flood, just at the end of the Ibans' clearing their farms and before they could transplant. Those who made their seed-beds (chemi') in low-lying areas lost the young shoots (anak padi) under the water. As Ganai, Apai Gaun from Rumah Nyala, Sungai Aup, complained, "This is the third (consecutive) year our farms have failed on account of rain" (Tu'meh ketiga taun umai kami enda' nyadi setegal ujan).

3. Minerals

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[35] The Sibu District is marked by a singular absence of valuable minerals, and mining industries play a relatively small part in the whole of the Sarawak economy. With the exception of oil, mining has been concentrated entirely in Sarawak west of the Batang Lupar, and there seems little likelihood of any significant discoveries being made